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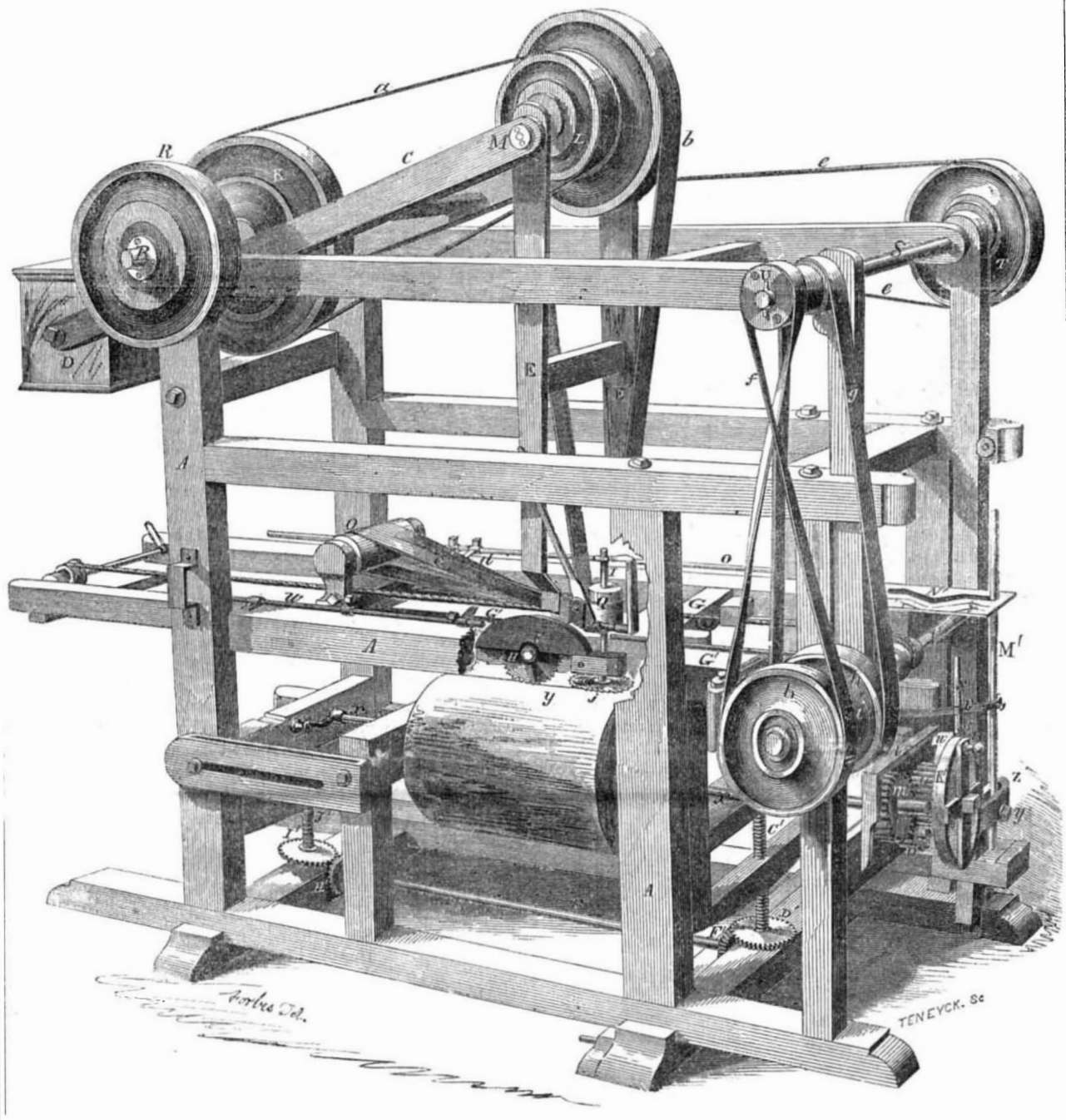
MACHINE FOR SAWING BOARDS, SCANTLING, &c., DIRECT FROM THE LOG.



Sawing Machinery.

This figure is a perspective view of the machine of Benjn. Fulgham, of Richmond, Ind., for sawing out boards, scantling, laths, stuff for hoe and broom handles, &c., direct from the log, or from bolts.

As here represented, it combines improvements for which two patents have been granted, and it is very perfect in its operations. The first patent was obtained on the 19th of Sep., 1854, and illustrated on page 76, this volume SCIENTIFIC AMERICAN. It embraces the features for sawing out stuff by both the forward and backward motions of the saw carriage.—The second patent was granted on the 24th of July last, and its claim, published on page 370, embraces an ingenious method of self-feeding the log to the saws.

A represents a rectangular frame, at the upper part of which is a transverse shaft, B. On this shaft there is hung a vibrating frame, C, on the outer end of which there is hung a counterpoise weighted box, D. To its inner end there is hung the pendant frame, E, which has a saw shaft at its lower end, the said shaft passing through the saw carriage, G, and working in suitable guides attached to the feed frame, G'. The shaft, F, secures the lower end of the pendant frame, E, to the frame, G. The vertical circular saw, H, is secured to one end of this shaft, and to one end of frame, G, is secured a vertical shaft, I, having a horizontal circular saw, J, secured on its lower end. From pulley K, on shaft B, a band, *a*, passes around pulley L, on shaft M. From another pulley on said shaft, a band, *b*, passes around a pulley (hid from view) on the saw shaft, F. This pulley has also a belt, *c*, passing from it around a small drum near the back end of the carriage; another crossed belt, *d*, passes around this drum and a horizontal pulley on the saw shaft I. On the off end of shaft B, there is a pulley from which a belt, *e*, passes around a pulley, T, on shaft, S, at top and front end of the frame, A. There are two other pulleys, U, on the nigh end of shaft, S, from which a cross belt, *f*, and a straight belt, *g*, proceed, and pass over two loose pulleys, *h h*, on the shaft, V, at the front end of the frame. Between the two pulleys, *h h*, there is a clutch, indicated by *i*, but hidden, which is operated by the backward and forward movements of the saw carriage, to throw these pulleys alternately into and out of gear with shaft V, around which passes the cord over pulleys from end to end of the frame, A, to reverse the motion of the shaft, V, and thus make the saw carriage traverse alternately back and forth. This is done by having dogs on the side of the frame, G, which strike studs on the vibrating long rod, *w*, when the carriage has moved to each end; to rod, *w*, is connected a shipper (hid from view,) which operates clutch *i*, and the pulleys, *h*, reverses the motion of shaft, V, and the saw carriage alternately, continually back and forth. The studs on rod *w* can be set to give the carriage a shorter or longer traverse, as may be desired. The vibrating frame, C, allows the pendant frame to travel or oscillate with the carriage, so as to retain the belt, *b*, perfectly taut all the time. This is a very ingenious arrangement. The saws cut while their carriage is traveling back and forth in both directions. The one saw, J, cuts in the log horizontally, the other, H, vertically, so as to cut out a complete board, or plank, or slat, or strip for a hoe or other handle, at each movement of the carriage. The method of operating the saws and the carriage to cut during both motions of the carriage, is embraced in the first patent of Mr. Fulgham. The method of feeding and cutting from the log is that embraced in the second. This is accomplished by feeding the saw frame down the requisite distance at the end of every traverse of the carriage, also to move the log a proper distance so as to take a new cut. The method of doing this we will now describe:

In the permanent frame, A, are two spindles or shafts, *x x*, between which the log, *y*, to be sawed is secured, and receives a proper intermittent rotary motion for every new board or strip to be sawed off. To the outer end of one shaft there is attached a pinion, *m*, which gears into a pinion, *n*, attached to the frame, A. The pinion, *n*, gears into a smaller one, *o*, attached to the end of another shaft (hidden from view,) which has a bevel pinion on its inner end. This bevel pinion gears into a corresponding one on the upper end of a vertical screw shaft, C', which has a bevel wheel, D' at its lower end. This screw shaft, C', passes through a cross piece or bolster at the front part of the frame, G'. The bevel wheel, D', gears into another, E', at the end of shaft, F', which has a corresponding gearing, H' I', at the opposite end. The screw shaft, J', passes into a cross piece or bolster at the back part of frame G'. These screw shafts, C' J', work in nuts in the frame, G', and support it, consequently, as they are moved in one direction, they will feed down or lower the saw frame a certain distance, to make the saws take a cut into each new layer of the log.

The mode of feeding down the saw frame is ingenious and peculiar. To the outer end of the shaft of the cog wheel, *o*, there is secured a wheel, K', having a smooth rim, and adjoining it on the off side there is placed a plate having a bar, *s*, attached to it by a pivot, *t*. This bar has an inclined recess, *s'*, cut in it, in which the rim of the wheel, K', fits. The plate of this bar has a spring, *w*, attached to it, which keeps the edges of the inclined recess binding on the periphery of the wheel, K'. The upper end of bar *s*, passes through a socket, *v*, on the outer end of a small arm, the inner end of which is attached by a pivot to the upright vibrating lever, M'. The upper end of this lever, M', passes through and works in a V-shaped slot in a plate, N', which is attached to the end of the longitudinal rod, O, fitted in guides in frame, G'. The lower part of lever M', is provided with a slot, *z*, through which a pin is inserted, and passing into frame, G'.

OPERATION—The log, *y*, is centered between the shafts, *x x*. Motion is then given to shaft B, by a band passing over pulley, R, from a water wheel or steam engine, and the saws, H J, are rotated, and the saw frame or carriage, G, drawn along between guides in the frame, G', and the saws cut a strip out of the log leaving a vertical shoulder on it. When the saws in their carriage have reached the end of the log, the clutch, *i*, is operated as has been described, and the carriage moves back, the saws cutting a strip on the return movement also. Just before the return motion of the saw caraiage, G, the plate, N, is shifted forward by a dog on the frame, G, striking a stud on the rod as the carriage is moving. The plate, N', will then push the rod, M', in the V-shaped slot, and make it vibrate, thereby moving the bar, *s*, and the wheel, K', when the log will be turned round a suitable distance on its centers, and the frame, G', which sustains the carriage, G', will be lowered a small distance by the bevel gearing operating the screw rods, C' J', which sustain the frame, and which work in nuts in the bolsters of it. These movements —the log partially round and the frame, G', slightly lowered—feed the log to the saws for the succeeding cut. This causes the log to be sawed in a spiral form from the circumference to the center. The lowering of the frame, G', at every traverse of the carriage, G, determines the width of the stuff to be sawed. Various kinds of stuff, therefore, can be sawed in the

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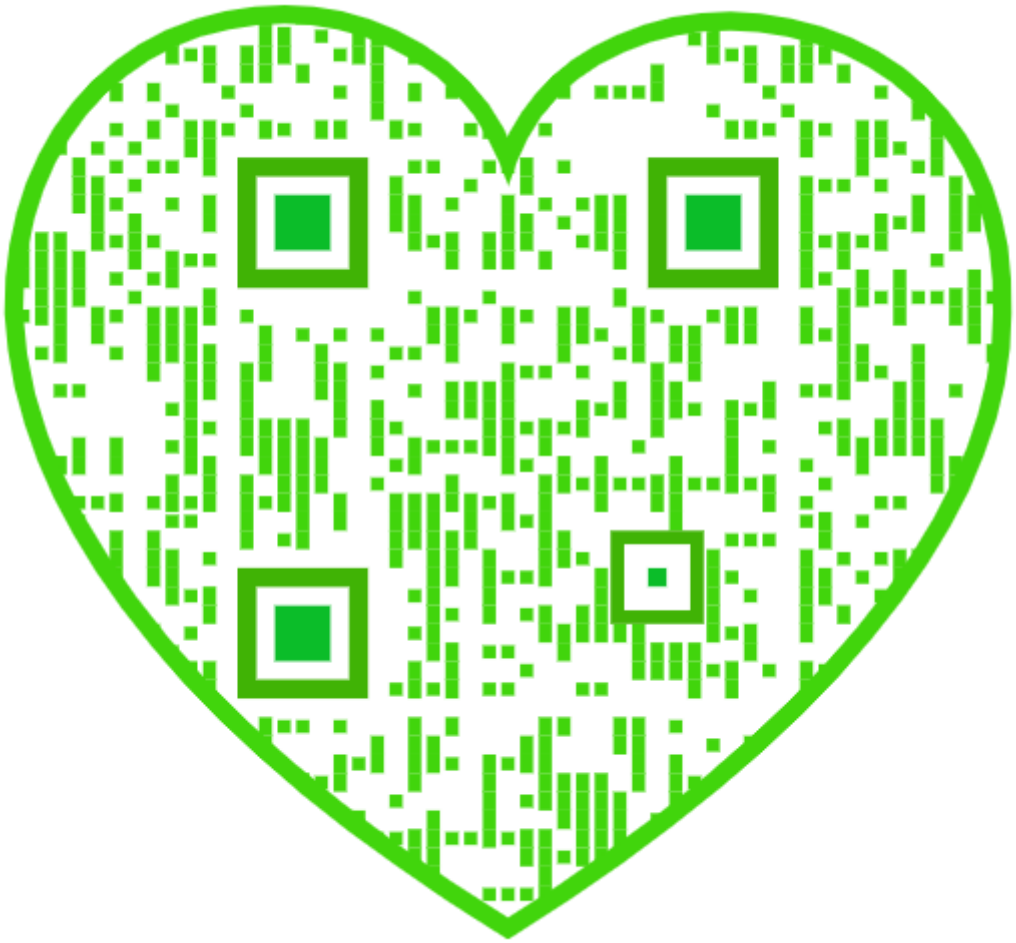
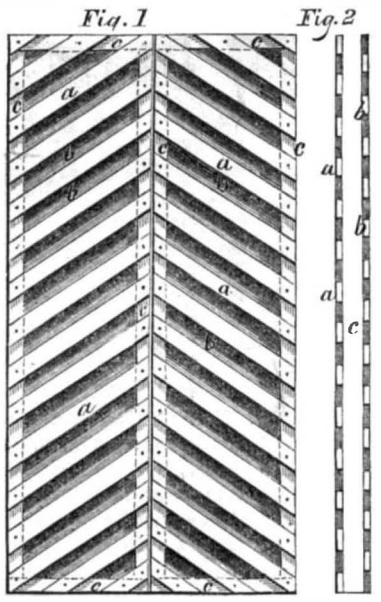


machine by varying these movements. As the saws approach the center of the log, the feed motion necessarily must be increased to saw stuff of an equal thickness, as the log, being the smaller, cannot pass through so much space with the same amount of its shaft's rotation. This is provided for by the lever, M', passing through the slotted plate, N', which is attached to the frame, G', and of course as this frame is depressed, every stroke of the plate, N', will increase the movement of bar *s* and give it a longer stroke, like a ratchet, to give a greater amount of motion to the shaft of the log and frame, G'. A square bolt may be placed in a frame made for the purpose, and sawed into strips like the log, only it has to be shifted crosswise under the saws, when a series of strips or boards are cut down vertically through it by the depression of frame, G'.

In this machine, laths, hoe, and broom handle stuff, &c., as well as boards, scantling, &c. may be sawn out directly from the log, requiring no re-sawing. The machine is very compact, as it cuts both ways, consequently its carriage is only half the length of those which cut by the log instead of the saw moving. It is self-acting, and can be so arranged by a cut-off plate for the slot in plate N', as to shorten the stroke of the lever, M', for any width of stuff to be sawed. It will be understood that the rod, O O, and plate, N', on it, are operated by dogs striking studs during every traverse of the saw carriage. It is certainly a labor-saving sawing machine, as the log or bolt, *y*, has but to be centered in it, and the machine set in motion, when it will work away until the entire log is cut up, without any handling or work by the operator. We have seen a large working model of one of these machines in operation in this city, and was pleased with its performance. It will be on exhibition at the Fair of the American Institute, to be held in this city in the early part of next October, where all interested in valuable and new improvements in sawing machinery will have an opportunity of witnessing its operations.

More information respecting it may be obtained by letter addressed to J. M. Hutton, Richmond, Indiana.

Chase's Fancy Window Blinds.

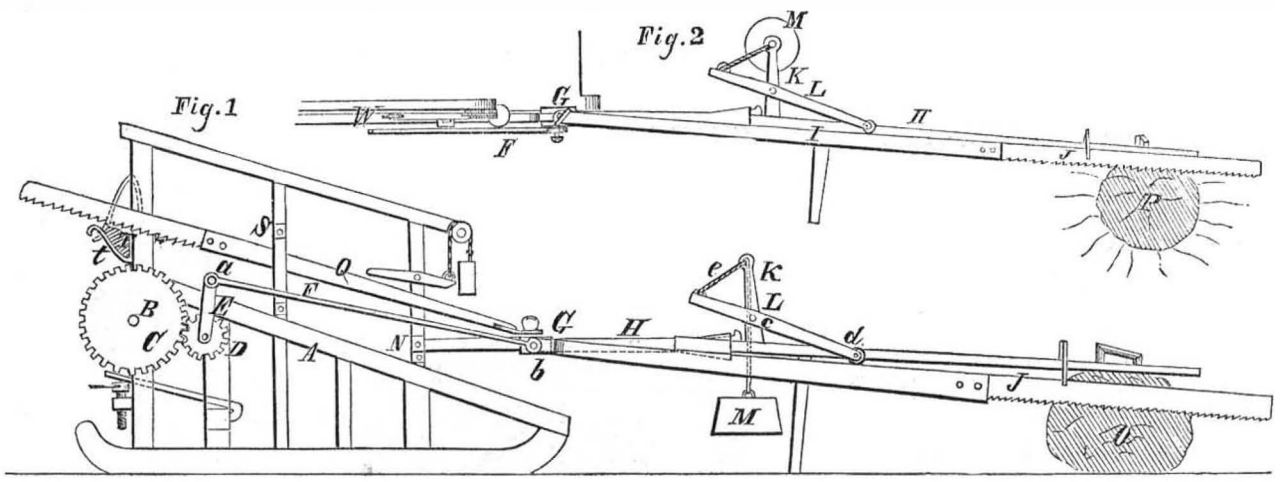


The accompanying figures represent the fancy window blind of Frank Chase, of South Sutton, New Hampshire, for which a patent was granted to him on the 17th of July last.

Fig. 1 is a front view of a pair of blinds, and fig. 2 is a transverse section or edge view. A rectangular frame, *c c c c*, for each blind is made by securing side stiles to the top and bottom rails in any common way. To one side of the frame a series of oblique slats. *a*, are nailed as shown, leaving spaces between them. On the other or back side of the frame, a series of slats, *b*, are nailed opposite the spaces between the slats, *a*. All these slats are nailed in at the same angle, and as each series is secured on the opposite sides of the frame, they allow the air to pass through the spaces between them—which are equal to the thickness of the stiles—but will prevent the direct rays of the sun penetrating into the room, and yet will admit reflected light between the spaces named. These slats, *a b*, it will be understood, are fixed and not the same as the vibrating ones of venitian blinds. They may be put on in different fanciful positions from that shown and yet maintain the same characteristics, such as radiating from a center, forming a star, or nailed horizontally, to present nearly the same appearance as common blinds, the frames being hung in the same manner. Their advantages consist in being easily made, and at a small expense, and in being strong and durable. No tennons, mortises, rods, or wires, are required in constructing them. They are of an ornamental character, and as substitutes, at least, for shutters, their advantages are evident.

More information may be obtained by letter addressed to the patentee, at South Sutton, N. H.

MACHINE FOR SAWING DOWNSTANDING TREES, AND LOGS.



The accompanying engravings are views of a new machine for sawing down standing trees or logs, for which a patent was granted to Matthew Ludwig, of Boston, Mass., on the 17th of July last. Fig. 1 is a side view of the machine, and fig. 2 is a top view of it, shown in a different position from that of fig. 1. Similar letters refer to like parts.

A, fig. 1, represents a suitable framing on which an ordinary inclined horse power is placed, to operate the machine. B represents the shaft of the upper roller of the endless belt, having on one end a toothed wheel, C, which gears into a smaller toothed wheel, D, the axis of which is attached to the framing. The toothed wheel, D, has a crank arm, E, attached to it. To the end of the crank arm there is attached by a pivot, *a*, one end of a connecting rod, F. The opposite end of this connecting rod is attached by a screw, *b*, to a sleeve, G. This sleeve is of a rectangular form, and is fitted loosely on a rectangular bar, H, one end of which is secured to the framing. The opposite end of the bar, H, is attached to the log or to the standing tree to be sawed down, as will be presently shown. I represents a bar, one end of which is attached to the sleeve, G, and the opposite end is attached to a saw, J. To the bar, H, there is attached an arm, K, which has a lever, L, secured to it by a screw or pivot, *c*. The inner end of this lever, L, is provided with a friction roller which bears against the bar, I, and the opposite end of the lever has a cord attached to it, said cord passing through a hole in the outer end of the arm, K, and having a weight, M, attached to its lower end. The inner end of the bar, H, is fitted in a socket, N, attached to the framing, A, so that said bar may be detached from the frame and turned or reversed.

If logs are to be sawed for firewood, the outer end of the bar, H, is clamped in any proper manner to the log represented by O, the log set in a horizontal position. In this case the arm, K, is in an upright position, and the friction roller of the lever, L, bears upon the bar, I, and consequently keeps the saw to its work. The reciprocating motion of the saw is produced by means of the revolution o the crank arm, E, the sleeve, G, working back and forth on the bar, H.

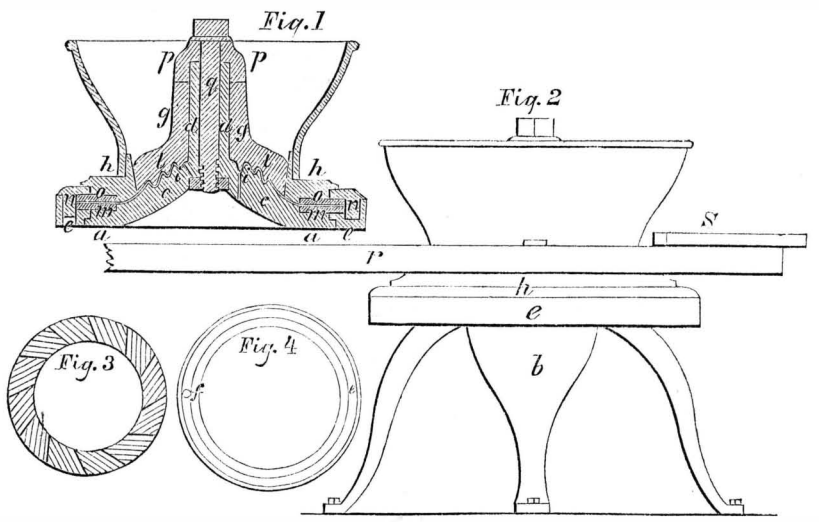
In order to saw down standing trees, the bar, H, is withdrawn from the socket, N, turned, and replaced in the socket. In this case the bar, I, and saw, J, rest upon the bar, H fig. 2, but the friction roller of the lever, L, still bears against the bar, I, and keeps the saw to its work, the saw, of course, cutting in a horizontal direction. The outer end of the bar, H, is clamped to the side of the tree, P.

In order to re-saw the wood into short lengths, another bar, Q, and saw may be attached to the sleeve, G, as in fig. 1, the bar, Q, working in a suitable guide, S, attached to the framing. The lengths of wood represented by T, while being sawed, may rest in suitable hooks, U, at the front of the framing.

This machine is simple, and easily constructed.

More information may be obtained by letter addressed to the patentee, No. 484 Washington street, Boston, Mass.

LEAVITT'S PORTABLE GRAIN MILL.



The accompanying figures represent an improved portable grain mill, for which a patent was granted to Charles Leavitt, of the city of Quincy, Ill., on the 27th of last February. Fig. 1 is a vertical section of the mill, fig. 2 is an elevation, fig. 3 is a plan view of the movable rings, and fig. 4 is a plan view of the annular conductor. Similar letters refer to like parts.

The nature of the invention consists in applying to a portable Corn Mill, (in which the external portion or concave revolves upon a fixed cone) the following improvements: First, the combination of the bed plate, legs or supports, the breaker, and the main pivot, cast in one piece. Secondly, in combination with the foregoing, a lever in two parts, attached to an external revolving concave, constructed and arranged substantially as hereinafter described.

The bed plate, *a*, legs or supports, *b*, ogee breaker, *c*, and vertical main pivot, or journal, *d*, are cast in one piece. Upon a flange projecting from the lower edge of the bed plate, *a*, is placed an annular grooved conductor, *e*, which has an outlet at *f*. Between the top of the breaker, *c*, and the base of the pivot is an annular groove, *i*, with an outlet at the bottom thereof, for the purpose of collecting and discharging the oil from the pivot, *d*, and preventing it from mixing with the meal. A sleeve, *g*, fits upon the pivot, *d*, and revolves thereon, its lower edge resting upon the bottom of the groove, *i*. A top plate or cover, *h*, having a circular opening in its center a little less than the base of the breaker, *c*, is joined to the sleeve, *g*, by four strong arms, *l*. The plate, *h*, extends to the outer edge of the conductor, *e*, and carries on its under side, square, projecting scrapers, *n*, which fit in the conductor and revolve therein. The arms, *l*, are toothed on their under sides to correspond with the teeth in the breaker, *c*, forming together an effective crusher for the corn and cob when ground together. In the space between the base of the breaker, *c*, and the inner edge of the conductor, *e*, are secured by bolts (in such a manner as to be readily removed when required) a flat ring of steel or hardened iron, *m*, with grinding teeth on its upper side, of any convenient form; but it is preferable for crushing or coarse grinding, to use teeth, the transverse section of which presents one side inclined and the other vertical. The mill is run in such a direction that the vertical sides of the upper and lower grinding surfaces shall meet each other. In a groove in the upper plate, *h*, is placed another ring, *o*, of the same size, material, and form as *m*, with the teeth of the same form, and arranged as before described; this is also removed when required. Between the ring, *o*, and the central opening, is a circle of large teeth inclined to the rear, and vertical to the front, and bevelled upwards on their inner edges for the purpose of forcing or crowding the grain on to the rings. It is preferable in grinding fine meal to run the grinding surfaces in such a direction as to oppose the inclined sides of the teeth in one ring to the inclined sides of the teeth of the other; and with that view another pair of rings are made to fit in the same places as the others, with the inclined sides of the teeth reversed. —Upon the top of the pivot, *d*, is a cap, *p*, which rests on the sleeve, *g*. Through the cap, pivot, and bed plate, a screw, *q*, passes, having its nut at the bottom; the object of this screw is to regulate the mill by pressing the grinding surfaces together. Upon a flange on the edge of the central opening is a suitable hopper. Upon each side of the hopper, resting upon the top plate, *h*, and secured thereto by bolts, is placed a piece of scantling extending to about twelve feet from the center of the mill, they there meet at a very acute angle, forming a lever secured to a bolt by which the horses are attached. A board, *s*, extends from one of the ends of the scantling to the other, upon which a man can stand to feed the mill.

This mill is best adapted for crushing and grinding corn and cob together, or by using the rings which present the inclined sides of their teeth to one another for fine meal, &c. If the teeth should wear out or break, fresh rings can be put in at a trifling expense. The annular conductor is a good improvement upon mills of this description, which allow the meal to fall from all parts of the base of the concave. More information may be obtained by letter addressed to the patentee at his residence in Illinois.

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NEW-YORK, SEPTEMBER 8, 1855.

The End of our Year.

With this number we close the tenth volume of the SCIENTIFIC AMERICAN, and drop the curtain upon the professional labors of an entire year. To one and all of many thousands of kind readers and friends, we return our sincere thanks for the aid they have lent us in sustaining our work during the past, and for the encouragement they have so nobly proffered, to increase our efforts in the future. They may rest assured that nothing within the reach of our humble capacities will be spared in order that we may merit the continuance of their generous patronage and approbation.

Set out in the size and form of an ordinary book, the contents of our last years' volume would cover hardly less than two thousand pages, with near five hundred fresh, original engravings. No expense or pains have been omitted to render our work, in a measure, complete in all its divisions. The world of discovery and knowledge has been watched and ransacked, and its various departments made to contribute, in some degree, to the wants and interests of the great family of minds within our care.

In compensation for these outlays and labors we have levied a tax upon our subscribers of two-thirds of a cent per diem from each,—the sum they pay for our paper at the subscription price of $2 a year. When we reflect that the ordinary cost of a good Enclyclopædia is seldom less than ten dollars, and that such a work touches not a tithe of the subjects which come within the range of a single volume of the SCIENTIFIC AMERICAN, we think none of our readers will be apt to regard the levy we make as very extravagant. On the contrary, they cannot fail to be impressed with the extraordinary cheapness of our publication, while they feel that its circulation ought to be extended to the highest possible degree. We ask, this year, that each of our subscribers will act under the impulse of such thoughts; that he will use a little personal exertion to increase the number of subscribers to our work; that he will endeavor, for once, to gladden our hearts, and also contribute his mite towards the spread of sound and useful information, by endeavoring to send us at least one new name, with his own, on the renewal of his subscription.

More About Lightning and its Conductors.

Lightning rods do not attract electricity, nor is that their object; they are simple conductors of the electric fluid, and are erected higher than the other parts of buildings so as to act as highways for the fluid from the cloud to the earth.

The great number of houses, towers, and ships without rods that have been struck with lightning, afford evidence that it always selects the nearest object from a surcharged cloud to reach the earth. With respect to lightning and its action, Sir Snow Harris, who has perhaps written most ably on the subject, says: "lightning is the evidence of some occult power of nature forcing a path through substances which offer greater or less resistance to its progress, such as atmospheric air, vitreous and dry vegetable substances, and the like. In the case of such bodies, a powerful evolution of light and heat attends its course, together with an irresistible and disruptive force, by which compact substances are rent asunder, whereas it finds an easy path through some substances which offer but little resistance, such as copper, iron, &c." By good metallic conductors, then, lightning becomes transformed into an unseen harmless current, hence the great benefit of and necessity for the use of such protectives in all countries subject to severe thunder storms. A lightning rod, to be effective, must be of such a capacity as to conduct all the electric current unseen to the earth, for if too small it may be fused, and the current will discharge itself through other parts of a building. It must always be continuous, and terminate in some moist part of the earth, to conduct it away and dissipate it in the mass below. The larger the electric conductor, the better, for it possesses the greater capacity to conduct the current with safety and ease. If the bed of a stream is too narrow to allow the passage of accumulated waters, they overflow its banks and carry destruction in their course, but if its banks are high and spacious they confine the water, and protect the surrounding vales; it is the same with electric conductors. If all houses were built of metal, such as cast iron, they would be perfectly free from danger by lightning, as great masses of conducting material obviate all danger. We have seen many lightning conductors put up too small to be of any great value, and others erected displaying equal ignorance of the nature of lightning.—Thus, some rods are made to terminate in a dry sandy soil and others in ground which becomes hard, dry, and caked in summer.—The effect of such methods of terminating the conducting rods is like raising a dam to obstruct the progress of a swollen river. Conductors shall always terminate in moist earth, or in water.

For the central tower, 150 feet above the roof of the new House of Parliament in London, Sir Snow Harris recommends a capacious conductor of a copper tube two inches in diameter and one-eighth of an inch thick, and conducted to the earth in as straight a direction as possible, and also connected to all other metal tubing in the building, for the purpose of spreading the electric current through numerous channels, and thus weaken its force.

Sheet copper for conductors 5 inches wide and 3-8ths thick, is sold at 31 1-2 cents per foot. Such strips of copper have proven to be safe conductors for ships, and they will make most beautiful ones for houses. As conductors require to be large—possess mass—according to their length, those for houses need not be so broad as those for ships. Such copper sheets cut into ribbons 2 1-2 inches wide, would embrace a solid capacity of nearly half a cubic inch of metal, costing not quite 16 cents per foot. How easily these can be laid along the crowns of roofs, and up the sides of gables and chimneys. It would be well to have a point extending above every chimney in a house, and all of them perfectly connected to the copper strips, and the latter terminating by a suitable rod in the earth. Copper is eight times a better conductor than iron, and not so subject to oxydation.

We have lately seen lightning conductors composed of copper and iron wires, twisted together and connected at the foot in the ground with a cylinder of zinc. The object of this combination is to prevent—as we have been assured it would—the iron being coated with an oxyd, which impairs its conducting qualities. Sir Humphrey Davy noticed that substances would only combine chemically when in different electrical states, and that by bringing a body naturally positive into an artificially negative state, its usual powers of combination were destroyed. Copper is a metal but slightly positive, and by bringing it in contact with another, to render it slightly negative, the decomposing action of moisture and air are rendered null. He therefore attached a piece of zinc about an inch square to a plate of copper, and immersed it in sea water, and the result was that the zinc preserved fifty square inches of the copper from corrosion. An iron nail secured to the copper plate produced the same results. The copper was preserved, but the iron and zinc slowly corroded. If a cheap lightning conductor, composed of iron and copper wire, can be preserved from corrosion by a small zinc cylinder in the ground—which can be renewed often at but little expense—then an object of some importance is accomplished, but this is a question which only relates to the preservation from oxydation of the conductors.

Statistics of the New York and Erie Railroad for July.

We are indebted to the General Superintendent, D. C. McCallum, Esq., for statistics of the work done and expenses of all the divisions of the above railroad during the month of July last. These are embraced in tables, showing the amount of miles run by each engine (with its number pointed out,) the load carried, and the whole expenses for fuel, oil, tallow, waste, repairs, wages, &c. The number of miles run on the whole lines, 249,470; the cost for engines and firemen was $13,185,67, (5 29-100 cts. per mile;) the miles run to one pint of oil, 15 53-100; the cost per mile for waste, tallow, and oil, 1 31-100 cents; the cost for repairs of engines per mile, 5 72-100; the cost of fuel (wood) per mile, 11 12-100 cents—31 38-100 miles run with one cord. The total cost, $58,-469,92 (23 44-100 cents per mile.) These tables are prepared for the benefit of the employees, and since the commencement of their publication, there has been a considerable reduction of expenses. In the month of May, the total cost per mile was 25 49-100 cents; in June, 24 30-100; in July, 23 44-100—amounting to 2 05-100 per mile, thus ssving more than the expense for oil, waste, and tallow. The greatest constant expense for any one item is that of fuel, it amounts to more than double the expense for repairs of engines. Improvements for reducing the cost by the use of coal, or some other means are much wanted.

Alarming Encroachment on the Patent Office.

An esteemed correspondent, resident in Washington, informs us that the Secretary of the Interior has just issued a command directing the immediate surrender of one entire floor of the new Patent Office building, to the uses of the Indian Department. In less than a week's time, he presumes that an army of scribbling clerks, will occupy the noble halls, which wise statesmen of former days, had set aside and consecrated to the promotion of American genius.

We can regard this action as little better than an official outrage, which, if left to reach a full consummation, will result in evils of a very serious nature. It is, we fear, but the beginning of a sad retrogression in the affairs of the Patent Office, consequent upon the want of a vigorous and determined chief.

When the Hon. Charles Mason occupied the Commissionership, he resisted, successfully, all such attempts to abridge the usefulness of the Patent Office. He saw how the interests of inventors had suffered—and through them the whole country—by reason of the crowded and pinched space then allowed. Models had to be heaped up in promiscuous piles, never to be got at when wanted. Drawings and matters for immediate reference were deposited, some in one room and some in another. Every thing was confused and inconvenient, to such a degree, that labors which are now done promptly in an hour's time, were then dragged along for days and week's, nay even months. Our readers are familiar with the history of his reformatory operations; they know how he gradually rescued the department from its deplorable condition, infused new life apparently into the entire patent system, put an end to those deadly delays in the issue of patents which had so long disheartened inventors, increased the business and revenues, and then, to the regret of all,—left office.

No sooner is his back turned than the insidious efforts of politicians are put to work, again to undermine and cripple the efficiency of this noble branch of the public service. Unless something is soon done to arrest the new encroachment, inventors may expect, ere long, to be compelled to await the action of the government upon their patent cases by the year, instead of by the week, as at present.

The Secretary of the Interior will add nothing to his reputation for sagacity and statesmanship by this uncalled-for thrust into the vitals of the Patent Office. Instead of retarding and reducing the Department, it should be his highest study to promote its convenience and extend the sphere of its usefulness. We are surprised that he should regard the personal comfort of his Indian clerks, as superior, in importance, to the free and unrestrained operation of the United States Patent Office—that glorious institution through whose instrumentality the long catalogue of splendid inventions and discoveries, which now help to prosper our country and give her a name throughout the world, have been called into existence.

Shocking Railroad Accident.

A most lamentable railroad accident occurred on the Camden and Amboy Railroad, N. J., on the 29th ult. by which three passenger cars were smashed to atoms, twenty of the passengers killed, and seventy wounded.

The 10 o'clock train from Philadelphia had arrived at Burlington on its way to New York, somewhat behind its usual time, and was obliged to wait there ten minutes for the 8 o'clock train from New York, which was also behind time. Having waited the required time it moved cautiously on its way for about three miles, when it was discovered that the New York train had arrived first at the half-way post, and was, by the rules of the road, entitled to the track. It then backed at the rate of twenty miles per hour, when it came into collision, on a crossing, with the horses attached to the light pleasure wagon of a Dr. Heineken, about half a mile from Burlington. The horses were killed instantaneously, one being thrown forty yards from the track.

The scene was horrible. The cars were piled upon each other, and numbers of human beings were lying among the ruins—some dead, some dying, some shrieking from pain. Thos saved in the train, and the passengers on the down train, aided by citizens of Burlington, who were quickly informed of the terrible accident, went to work to rescue the wounded and dying from the ruins. As soon as taken out they were conveyed to Burlington, where many private houses were thrown open to the admission of the wounded. The coroner's jury has been employed since in investigating the causes of this terrible catastrophe. These appear to be transparent; the fault lies entirely, we think, with the managers of the railroad. If the road had a double track, the accident would not have taken place. For years we have advocated double tracks, well *fenced in*, with gates at all the crossings. If such improvements were made on all our railroads, no collisions would ever take place. There is less excuse for this old, wealthy railroad corporation not having these improvements, than any other in our country.

Van Amringe's Fire Ladder.

A trial of Van Amringe's Fire Ladder was made at Cincinnati a few days since, with complete success. The machine is mounted upon wheels, and the ladder proper consists of four spars, forty-five feet long, each springing from a corner of the bed, which is ten feet by fifteen. When not in use, the spars are lowered past each other, and rest upon supports at each end of the bed, so that one pair projects over the horses, and the other "astern." The affair looked heavy and cumbersome, but upon its arrival upon the ground it was erected, by means of a rope attached to the top of one pair of spars, and run over a sheave on the other to a windlass on the bed, in forty-five seconds. Several lines of hose had been attached to the gallery previous to erection, and before the horses were unhitched four men were upon the highest gallery, fifty feet from the ground, and coupling their hose pipes. It was afterwards drawn along the street with five men in the highest gallery, and six men in the lower ones, of which there are four, corresponding in hight with windows in different stories of houses.

Altogether, it is a plain, common sense invention, which relieves firemen from the dangerous duty of clambering over slippery roofs, blinded by smoke and glare, and in constant dread of falling walls and roofs, while the force required to work it effectually is but four men and two horses. Measures have been taken to secure a patent.

INVENTIVE ACTIVITY—111 applications for home and foreign patents were made through the Scientific American Agency last month.

SPLENDID CASH PRIZES!

The proprietors of the SCIENTIFIC AMERICAN will pay in cash the following splendid prizes for the fourteen largest list of subscribers sent in between the present time and the 1st of January, 1856; to wit:

For the largest List	$100
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Names can be sent in at different times, and from different Post Offices. The cash will be paid to the order of the successful competitor immediately after the 1st of January, 1856.—Southern, Western, and Canada money taken for subscriptions. Post-pay all letters, and direct to

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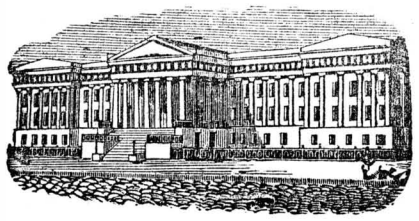

[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office,

FOR THE WEEK ENDING AUG. 28, 1855.

TRAPS FOR CATCHING ANIMALS.—J. B. Bradley, of Watertown, Ct.: I claim the application of the ratchet bar, I, and pawl, J, to the trap, for the purpose of rendering it capable of confining the animal, after being caught under the drop or fall, as set forth.

[This patent is for an improvement on the rat trap patented by Mr. Bradley in May last, and noticed by us at that time. The present invention consists of a slight but ingenious addition, which renders the apparatus perfectly effective for the catching of wolves, foxes, woodchucks, and other species of game. We do not know of a cheaper or better trap for the purposes named than the above.—When set, it lays "as flat as a board," so that the whole concern except the bait may be covered up in the sand, entirely out of sight. Many a wary fox whose superior cunning had hitherto enabled him, on all occasions, to outwit his old enemy, man, has since ascertained by the sudden forfeit of his life, that the inventor of this contrivance is a step or two in advance of his neighbors in the way of ingenuity. Reynard is at last come up with. This is a good patent, and so is the other to which we have alluded. Both will be serviceable to the country, for they are wanted every where.]

COTTON GIN SAWS—A. D. Brown, of Columbus, Ga., assignor to Margaret L. Brown, of Opalika, Ala.: I am aware that cotton gin saws have previously been constructed in segments of circles, but I regard that as a totally different arrangement, as the teeth are arranged in the same circle, and I do not claim any such arrangement,

But I claim arranging the teeth in a series of curves, b b, eccentric to the axis of the saws, or what is equivalent, in a series of tangential lines, substantially as set forth.

[This invention consists in arranging the teeth of the saws in a series of curves eccentric to their axis, or, what is equivalent, in a series of tangential lines. By this means, with a proper arrangement of the saws relatively to each other, it is rendered impossible for any two saws to catch the same fiber across a rib, and thereby cut or break it, while a peculiar degree of facility is provided for the clearing of the saws by the brush. It is one of the most ingenious and excellent improvements in its class that we have seen for a long time. Its general introduction will tend to improve the value of our cotton staple. No one can fail to see that cotton, which comes to the manufacturer with its fibers evenly preserved to their natural length, is worth considerably more to him than where it is all broken and cut up. The expense of gins made according to this patent is no greater than those in ordinary use; while, as we have shown, the cotton comes out equally as well cleaned, and otherwise in a far superior state. The amount of work done is also the same as in other gins of like capacity. These striking facts cannot fail to bring Mr. Brown's invention to the notice of planters and others. The improvement seems destined to take a high rank among the improved labor-saving machines of the day. The patent we regard as one of importance and value.]

SPLITTING FIREWOOD—W. O. Bisbee, of Camden, N. J.: I wish it to be distinctly understood that I do not wish to confine myself to the exact form or method described, of operating the machine, or to the exact number of vertical knives shown.

But I claim the vertical knives, G, as arranged, with their edges a distance in advance of each other, and their sides at different angles, so as to act effectually as a means of rifting wood, as described.

PREPARATIONS OF WOOL OIL.—Thos. Barrows, of Dedham, Mass.: In basing my claim of invention or improvement, on the use of mucilaginous matter, I do not include aluminous or gelatinous matter of animal origin; nor ammoniacal or other alkaline emulsions which have been before used: but restrict myself to the use of those watery solutions of mucilage from plants and seeds, where mucilent character is distinguished from the gum or glue-like character of those substances heretofore used, by not drying out from the mixture with the oil, when on the fibers of the wool I use any of the oils, adapted to oiling wool, in mixture with mucilage, although such mixture, by rest, for a longer or a shorter time, will become separated into oil, which floats, and mucilage which subsides; but prefer the prepared oleic acid or olein mixture, as it often remains uniform several days. I, however, lay no claim to the application of oleic, as described.

But I claim, for the treatment and imbuing of wool, during or previous to its manufacture into yarn or cloth, the application thereto, of mucilage, possessing an attraction for water, such being found in sea mosses and allied vegetable productions, or in various seeds, such as flax seed, it being used either alone or in mixture with an oil, or some other material.

CARRIAGES—J. L. Cisco, of Xenia, O.: I claim the application of the apparatus described, in turning carriages short, consisting of the half circle bars or plates, and sliding bar attached to the running gear, as described, in connection with the fifth wheels, by which, in turning short, the body is carried out of the way of the wheels, in manner substantially as described, or any other apparatus, substantially the same, producing the same effect.

FACILITATING THE REMOVAL OF INCRUSTATION FROM STEAM BOILERS—F. P. Dimpfel, of Philadelphia, Pa.: I claim the method substantially as described, of facilitating the removal of incrustation in steam boilers, by inducing breaks in the circle of the incrustation, in the manner described.

HARVESTER RAKES—O. C. Green, of Belleville, Ill.: I am aware that the delivery of grain at right angles to the line of draft of the team, has been accomplished by means of a rake traveling across the platform, in conjunction with a second rake, turning in a segment of a circle, and therefore I do not claim the described delivery of grain, irrespective of the means by which it is accomplished.

But I claim in rakes to harvesters, the combination of the rake, I, sliding head, G, way or guide, b, fender board, L, and incline plane, M, or severally of their equivalents, operating in the manner and for the purpose set forth, so that with a single rake I accomplish the raking of grain across the platform, and the delivery thereof, in the manner substantially as set forth.

SASH FASTENERS.—Asahel Gilbert, Jr., of Lowell, Mass.: I claim the hinged cross bars, c c, having split knob handles, serving to disengage the fastening in both sides of the sash, and to raise and lower the sash.

ROTARY WOOD SPLITTING MACHINE—G. W. B. Gedney, of New York City: I claim the machine described for splitting wood, consisting of the V-grooved knives, acting upon the wood as described, having openings in their apex to receive the clearers, substantially as specified, and in combination therewith the fingers for holding down the rear end of the wood to be split.

I also claim the mode of attaching the knives by the groove, e', at their back, and an over-reaching flanch e2, by which the resisting strain tends to hold the knife in place, as specified, without bringing the strain upon the bolt, by which it is fastened.

VISE—Robt. W. and Daniel Davis, of Yellow Springs, Ohio: We are aware that parallel vises have been heretofore constructed with cross levers and ratchet movement, and do not claim merely such as our invention.

But we claim our improved arrangement of the sliding ratch beam, C, pawl, M, and the detachable weighted key, P, and the cam, E, all constructed and operated substantially as described.

[In the construction of this vise the movable jaw is furnished, near its base, with a guide piece, which passes through a slot in the fixed jaw: the latter also as a guide, which passes through the movable jaw. Between, and attached to these guide-pieces are a pair of cross levers, or connecting rods, so pivoted and arranged that when the screw which operates the vise is turned, the movable jaw will always retain a position exactly perpendicular to that of the fixed jaw. All mechanics know the importance of keeping the two jaws thus in agreement. It allows a firmer hold to be taken on any substance placed between, relieves the screw of friction, and prevents the tendency of the vise to become weakened or soon to wear out. There are several different kinds of vises arranged with a view to accomplish the above purposes. The invention of the Messrs. Davis is intended to be considerable cheaper in construction, and, if possible, more effective in its operations than any of them. Only one screw is employed, and no nut is required to be sunk in the movable jaw. In other ways, also, the construction is cheapened. We regard the invention as a very excellent one.]

PLOWS—J. L. Gill, of Columbus, O.: I am aware that a combined steel and cast-iron mold board has been used; and also, that a cast standard has been used; these I do not claim.

Neither do I claim any of the parts used, separately; but I claim a plow composod of a steel mold-board, cast-iron share, sheath, and landside, when the several parts are arranged as set forth.

LIME KILNS—Danl. Herr Pequea, of Lancaster, Pa.: I claim making the arch of kiln, with two series of arched chambered ribs, so arranged that the outer ribs shall extend over and across the spaces left between the inner ribs, and at the same time leave sufficient space between the out and inner ribs, for the fire and heat to pass into the lime stone, whereby the fragments and loose lime are all prevented from falling into the fire, and are conducted down the channels into the proper receptacle below.

HAND STAMP—Horace Holt, of Winchester, Mass.: I claim a hand stamp in which the stamp is inked, and the impression effected by the movement of the stamp in one vertical plane, the ink being arranged directly under the stamp, and provided with a cover which can be moved away from or upon the said pan, or fountain, that by sewing, both as a cover to the ink receptacle, and as a platen to the article to be printed.

SCYTHE FASTENING—B. F. Josleyn, of Worcester, Mass.: I claim the arrangement of the lever, D, as applied to a hoop, e, as set forth, as a means of securing the shank of the scythe, to the end of the snath.

WEIGHING SCALES—J. L. McPherson, of New Vienna, Ohio: I am aware that various things have been made tubular, or hollow, for the purposes of strength with lightness of metal. This I do not claim.

But I claim, in combination with the shafts, H, the fifth or guard fulcra, c, which prevents the platform from careening, should the weight be unequally distributed on said platform, without in the least impairing its correct weighing, as set forth.

REGULATING VALVE FOR STEAM ENGINES—E. G. Russell, of Ravenna, O.: I do not claim to be the first inventor of a regulating valve, the area of whose opening is increased or diminished by any tendency of increased or diminished velocity.

But I claim the hollow cylindrical valve, D, open at one end and closed at the other, fitted in a cylindrical seat with its closed end on the inlet side of the said seat, and provided with a slot at one side, near the closed end, to allow the steam to pass through its interior, and having a spring applied, to balance the excess of pressure on the inlet side, and to give a tendency to open the valve, the whole operating as described.

[Cut-off valves for steam engines, arranged so as to be self-acting, and thus in a measure to serve as governors, have long been known. They are generally made to operate by means of a spring, so placed as to press open the valve with a given degree of strength; but when the pressure of the steam is greater than that of the valve the latter closes. It is obvious that such valves, if they could always be made to work with efficiency and certainty, would be very valuable auxiliaries to the steam engine, since they would tend greatly to simplify the mechanism and cheapen the cost. Mr. Russell's improvement consists in a peculiar form and arrangement of the valve and spring, whereby the difficulties which have hitherto attended the operation of self-acting steam valves generally, are believed to have been entirely overcome. The improved parts are pretty clearly set forth in the claims. The invention is one of ingenuity and importance. We commend it to the attention of all engineers.]

SEWING MACHINE CASES—F. A. Ross & Wm. H. Marshall, of New York City: We claim the making the case in the form of a cabinet, which, when opened, will afford space for operating the machine by the treddles, and will form a table for the work, by raising the leaves and supporting them by the doors of the cabinet, when thrown open in the manner described.

We also claim the construction of the folding top, which when open, furnishes drawers and shelf, for the convenience of the operator, as described.

SHUTTERS OR BLINDS FOR STORES—David Rohan, of Cincinnati, Ohio: I claim hinging the shutters together, by mitered joints, so that when closed the joint or hinges may be concealed.

I also claim, in connection with the mitered shutters, B C, the hinged piece, G, which serves the double purpose of a post, against which said shutters abut, and to which they may be locked, when the front is closed, and also as a finish to one of the shutters, when it is run back, as represented.

TRIMMING BOOKS—M. Riehl, of Cincinnati, O.: I claim hanging or attaching the knife, H, to the cross-piece, B, of the uprights, A A, by the arms, a a, as shown, whereby a drawing or oblique cut of the knife, is obtained, and operating the knife, by means of the worm wheel, E, screw, F, and connecting bar, D.

[Few substances are more difficult to cut, with a smooth, true edge, than sheets of paper, laid together in quantities. Printers and bookbinders have always experienced the truth of the fact, although many an inventor has studied hard to relieve their troubles from this cause. Complete success, however, has never been reached. Many ingenious devices have been made, but nearly all of them fall short of the mark, in one way or another. Mr. Riehl claims a priority of excellence in the device now patented. The sheets of paper to be severed are laid on a table; the knife is attached to a crank arrangement and pitman, in such a manner that by turning the crank the knife edge is forcibly drawn across the paper and the cutting thus effected. This drawing movement of the knife is the peculiar feature. For the purposes intended it is certainly an admirable arrangement. The invention is simple cheap in construction and effective.

BREECH-LOADING FIRE ARMS—B. F. Joslyn, of Worcester, Mass.: I claim the combining of the cone-headed pin, F, and two or more expanding rings, G and H, with the radial breech, C, of breech-loading fire-arms.

GRAIN AND GRASS HARVESTERS—Jno. Thompson, of Clifton, N. Y.: I claim discharging the grain from the platform, between the platform and the driving wheel and under its axle, when the same is done, in connection with a pair of wheels, whose axle extends across the machine, as described.

BRICK MACHINES—Levi Till, of Sandusky, Ohio: I claim, first, the use of the air pump, in combination with the perforated pressers, by which the air is exhausted from the clay, while under pressure, as stated, and not otherwise.

Second, I claim the device of the diagonal slots, m fig. 3, in combination with alternating with the pressers, by which all the excess of clay may escape, and is discharged on one side, and not on both, of the machine.

WAGONS—James Parsons, of Dublin, Ind.: First, I claim the arrangement of the side pieces or ways, A A, resting upon the elevating blocks, n n, near the outer end of the bolster, C, thereby gaining a greater width between them than is attained in other wagons constructed for similar purposes, thus giving space for loading, if raised on a plank or platform, to raise partly above and between them, if necessary to clear the ground, in hauling: also the manner of their connection between the forward and hind wheels by passing or sliding through the brace bands, e e, of the mortises or slots, o o, of the arch.

Second, I claim the structure of cast arch, the open mortises or slots, and their uses, that when the arch, F F, and wrought axletree combined, as represented in fig. 2, when supported by the hind wheels, the mortises or slots, o o, will be brought nearly or quite in a horizontal position, for the reception of the side pieces or ways, as described, thus serving the purposes of coupling the wagon, long or short, to suit circumstances.

Third, I also claim the peculiar adaptation of the oblong, e e, of the braces, H H, through the side pieces or ways, slide, and the hind elevating blocks pass, and the blocks being held in their proper position, by the bands, e e, dropping into the notches, ff, of elevating blocks, D D, thus giving them the sliding motion upon the side pieces or ways, and the side pieces or ways are permitted to slide freely through them and under the blocks, and from them they form a connection with the cast arch and wrought axletree, by a stirrup firmly binding them together.

Fourth, I also claim the manner of so arranging the hind elevating blocks, D D, as to give them the sliding principle, as described, and the ears, s s, on opposite sides, thus rendering them adjustable, in coupling the wagon, long or short, by means of the steady or toggle pins, i i i i, and again by the holding in connection with the braces, the arch in a perpendicular position, by the upper part of the casting, or mortises or slots, o o, being notched into the elevating blocks, as at c c, as described and shown.

CHANGING HARVESTERS FROM REAPERS TO MOWERS—Robt. Beans, of Johnsonville, Pa.: I claim the combination of the lever, O, and connecting rod, P, with any means of altering the hight of the frame, above the cutter bar, for the purpose of retaining the same relations between the stroke of the knives and the teeth or fingers, although the distance between the head of the cutter bar and the crank, be varied in so doing, as set forth.

CUTTING STANDING COTTON STALKS—S. Bowerman, of Detroit, Mich.: I claim the combination of the block, F, knife, G, rods, H H, springs, I I, rack, X, and cog wheel, J, when arranged for the purposes specified and shown.

[In the Southern latitudes of this country, where cotton is extensively grown, the removal of the stalks prior to the preparation of the land for new planting, is a slow and laborious operation, for it is usually done by hand.—The negro seizes hold of the stalk and bends it with one hand, while with the other he cuts it off at the root by means of a heavy cleaver.

Mr. Bowerman's invention consists of a cart which is driven through the stalks in order to bend them down close to the ground. At the rear part of the vehicle a large horizontal knife is arranged to move vertically between suitable slides. Motion is given to the knife by means of gearing on the wheels of the vehicle. As the cart advances the stalks bend, the knife is elevated and then suddenly discharged, to fall upon the base of the bent stalks, and clip them in a twinkling. Springs are employed to give additional force to the knife as it descends. Every one will see at a glance how much superior this mechanism is to hand labor.]

SHIPS WINDLASSES—James Emerson, of Worcester, Mass.: I claim the gearing, C D L M, and the ratchet, N, and O, on the shaft, I, when arranged substantially as shown, for the purpose of operating the shaft, I, of the windlass, with a quick or slower, or vibrating motion, and with a corresponding degree of power; one set of gear wheels, C L, being independent of the other set, D M, and allowing the windlass, in case of the breaking of one, to be operated by the other.

[The above is a highly valuable improvement. Without increasing the cost of the windlass, it affords much greater power, is more convenient, stronger, and less likely to get out of order than almost any of the other patented improvements of its class. We have in preparation some engravings illustrative of this invention, which will shortly be published, when the good qualities of the invention will be made to speak for themselves. Foreign patents have been taken out through the Scientific American Patent Agency.]

CUTTING IRREGULAR FORMS—P. H. Wait, of Barkersville, N. Y.: I do not claim the pattern, H, or the means of turning irregular formed articles by means of a pattern, for this has been previously done in various ways.

But I claim the employment or use of two vibrating or oscillating frames, placed upon a rod or shaft, B, and operated by means of the pattern, H, bearing against the sliding rollers or disks, C, said pattern, as it rotates, moving the stuff at the upper parts of the frames, towards and from the cutter disk, L, the cutter disk and rollers or disks being moved by means of the screw rod or shaft, G, and nut, F, as shown.

[This is an improvement upon Blanchard's well-known turning lathe—the first automatic machine ever made which was capable of producing an exact copy of an irregular pattern. The frame of Mr. Wait's machine looks somewhat like a saw-horse, for it consists of four arms, crossed and hung on a central shaft. The upper ends of the arms are furnished with revolving cutters, which bear against the stuff to be turned. The lower ends of the arms are made to embrace the pattern between them, being pressed up against it by means of springs. It should be observed that the frame does not revolve, but the arms move on the shaft, which serves as a pivot. When the pattern is made to revolve, the lower ends of the arms follow its irregularities, and thus correspondingly move the cutters to or from the stuff to be turned. There are two sets of cutters, and consequently two copies of the pattern are simultaneously turned.

The chief advantages of this machine over Blanchard's and other lathes for turning irregular forms consist, first, in causing the guide arms or pattern followers to embrace the pattern, so that no matter how long and slender the pattern may be, it can never give way or bend. Second, in producing two copies of the pattern at once; or, in other words, doubling the quantity of work produced without any additional complication of the machine. We might mention other advantages, but the two features named are sufficient to indicate the great importance and value of the invention. That it will find a very extensive introduction we cannot doubt.]

REAPING AND MOWING MACHINES.—Henry Waterman, of Williamsburgh, N. Y.: I do not claim the advancing and retreating curvilinear motion of the cutter bar.

But I claim the combination of the two sets of knives described, with the curvilinear motion of the cutter bar.

I claim the elastic fingers, in combination with the curvilinear motion of the cutter bar.

I claim collecting and depositing the grain by the revolving cradles, by the weight of the grain laid upon them by the reel.

INKSTANDS—Albert Bingham, (assignor to himself, and Andrew J. Bailey,) of Boston, Mass.: I claim arranging and combining with the hinged cover G, of the pen-port, B, substantially as described, the bow lever, H, whereby the cover may be raised, under circumstances and in the manner specified.

COLLAPSIBLE BOAT—Nathan Thompson, Jr., of Williamsburgh, N. Y. Patented in England Feb. 23, 1855: I claim, first, the combination of hinged flaps, or bottom pieces, with elastic or flexible sides, in the manner and for the purpose specified.

Second, the combination of hinged flaps with a center keelson and flexible or elastic sides, as set forth.

Third, I claim either of these combinations in connection with water-proof fabric, for closing and securing the joints between the several parts, applied substantially as specified.

Fourth, I claim a hinged swinging brace in combination with a hinged thwart thereto attached.

Lastly, I claim the sliding joint, in combination with the bow and stern hinges, whereby the effective length of a keelson or flaps, may be altered so as to suit the expanded and collapsed states of the boat.

STRAW CUTTERS—J. A. Thompson, of Cayuga, N. Y.: I claim giving the cutting disk of a straw cutter, a combined rotary and reciprocating motion, in the manner set forth.

FLASK FOR MOLDING BATH TUBS—Jno. Demarest, assignor to "the J. L. Mott Iron Works," of Mott Haven, N. Y.: I claim connecting, by means of a brace or braces, the sides of the drag or first section, and of the cope or third section of flasks, for casting bath tubs or other large and thin hollow vessels, substantially as described, in combination with the clamps and adjusting screws, or their equivalents, which embrace and act upon the sides of the cheek or second section of the flask.

And I also claim recessing the upper edge of the wings on the inside of the cheek, or second section of the flask, back of the inner edge, as specified.

VAULT LIGHTS—Wm. P. Walter and Jacob Green, of Philadelphia, Pa.: We are aware that it is a very common device to avail one's self of the expansive and contracting properties of metal, in fitting metal rings tightly around various articles; and we are also aware that it is not a new device to unite silicious compounds to metal by casting the former in a molten state about the latter, as, for instance, in the manufacture of porcelain or glass door knobs, with metal shanks; we therefore disclaim both of these as broad devices.

But we claim the described improvement in the construction of vault lights, viz., casting the molten glass directly into the metal frame, while in a heated state, said metal frame being grooved internally, so that when it contracts on cooling, and contracting as it does, more than the glass, this groove shall bind the glass lens tightly in its place and so retain it.

RE-ISSUES.

HINGES—Chas. Parker, of Meriden, Ct., assignee of Wm Baker, of Utica, N. Y.—Originally patented April 13, 1852: I do not claim as new, simply constructing the window blind hinge, with its screw plate so arranged as to be screwed to the back of the blind, and the outside of the window-casing.

But I claim the bridge, or inclined plane, at the base of the pin, and the corresponding elongation of the eye, operating, and in connection with the hook and catch, attached and connected in the manner described.

I also claim the elongated or enlarged eye, independently of its combination with the bridge, for giving the lateral motion to the blind, to effect the disengagement of the lower catch, as described.

I also claim, so placing the catches on the two parts of the hinge, as to cause the strains produced by the wind, or otherwise, to act directly upon the screws, whereby the pin and eye are relieved, as described.

DESIGNS.

STOVES AND FIRE PLACES—Winslow Ames, of Nashua, N. H.

COOKING STOVES—Russel Wheeler and Stephen A. Bailey, of Utica, N. Y.

PORTABLE FIRE PLACES—Winslow Ames, of Nashua, N. H.

COOKING STOVES—Conrad Harris, and Paul Wm. Joiner, of Cincinnati, O., assignors to A. Bradley, of Pittsburgh, Pa.

Great Trial of Agricultural Machines in France. America Victorious.

On the 14th of last mouth the great finishing trial of agricultural implements and machines on exhibition at Paris took place before the Grand Jury on the farm of the Postmaster General, M. Dailly, at La Trappes. Almost all the great men of France were present, as were many eminent Americans—ex-President Fillmore among the number—Germans, and British. The fields were smooth and beautiful, and the experiments consisted of drainage machines plows, thrashers, sowing machines, reapers and mowers.

Hundreds of machines were tested, and for the minor ones, the English carried off two-thirds of the honors; but the great interest was riveted on the reapers and thrashers. The contest with the former was among the Americans; they had the whole field to themselves. Manny's, Wright's (Adkin's Automaton Raker,) Hussey's and McCormick's reapers, were tested together, and the latter came off the victor. From the description given of the trial, much seems to be due to the able management of McKenzie, the agent of McCormick: Four thrashing machines were tried, and six men with flails, to test the difference of the labor. Pitt's American thrasher "bore the bell" among them all. The six men thrashed 60 litres of wheat in thirty minutes, Pitt's machine 740 litres, the English machine 410, the French machine, 250, the Belgian machine 150. In these trials of reaping and thrashing machines America stood singularly pre-eminent, and the effect upon the thousands who witnessed their operations was most happy. The practical and useful character of our inventions is now highly appreciated by the most distinguished men in Europe.

Submarine Telegraph Cable Lost.

News has been received by telegraph in this city, that the submarine cable for connecting Newfoundland with Cape Breton by telegraph was lost by some mismanagement "when forty miles out." The intelligence is indefinite as to the cause of the loss. It was seventy miles long, and made in England. We hope it can be "fished up," as its entire loss will prevent the completion of the telegraph line to Newfoundland, for at least another year.

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MODELS—We are receiving almost daily, models of inventions which have not the names of their inventors marked upon them. This usually prevents us from taking any notice of them whatever. We shall esteem it a great favor if inventors will always attach their names to such models as they send us. It will save us much trouble, and sometimes prevent the model from being mislaid.

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I. F. B., of Ga., $30; N. & S., of L. I., $30; W. C. W., of Mass., $10; F. & P., of N. Y., $30; J. S. B., of O., $30 H. & R. S., of Ga., $25: N. W., of Ala., $25; A. W. W., of Miss., $20; W. N. M., of Mass., $30; C. L. N., of N. Y. $55; E. G., of N. J., $25; J. H. S., of Mich., $55; N. S. W., of N. Y., $458; C. W. B., of Ct., $10; J. S. T., of N, Y., $30; I. J. O., of N, Y., $30; S. A. H., of Mass., $55; B. & H., of N. Y., $25; J. G. K., of N. J., $30; T. P., of Md., $30; T. A. A. B., of Ga., $50; H. H. F., of Miss., $50; J. N., of N. Y., $20; C. T. W., of Mass., $30; J. K., of N. Y., $15; P. V. W., of N. Y., $30; S. P. B., of N. Y., $55; J. W. H., of N. Y., $30; H. B. W., of Ct., $30; C. L., of O., $30 A. M. B., of N. Y., $10; J. S. R., of Cala., $35; M. & A., of N. Y., $25; R. S. P., of N. Y., $25; E. A. C., of Ct., $30; J. C. S., of Mass., $25: D. W., of N. Y., $20; M. P. D., of N. Y., $30; J. S. A., of Mass., $55; T. G., of N. Y., $25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Sept. 1st:—

G & W., of Tenn.; R. P., of London, Eng.; E. G., of N. J.; J. S. B., of O.; T. G., of N. Y.; N. W., of Ala.; H. & R. S. S., of Ga.; A. W. W., of Miss.; S. G., Jr., of N. Y.; R. W. B., of Mo.; O. W. M., of Ct.; A. F., of Mass.; C. L. N., of N. Y.; B. & H., of N. Y.; D. W., of N. Y.; J. H., Jr., of N. Y.; J. S. R., of Cal.; S. F. P., of N. J.; H. B. W., of Ct.; M. & A., of N. Y.; J. C. S. of Mass.; R. S. P., of N. Y.; H. S., of Mich.; N. & S., of L. I.; J. S. A., of Mass.

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